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10/552,774	10/12/2005	Bernhard Gleich	DE 030117	2136

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EXAMINER	
GUPTA, VANI	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/552,774
Filing Date: October 12, 2005
Appellant(s): GLEICH ET AL.

William S. Francos
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed October 11, 2010 appealing from the Office action mailed April 13, 2010.

(1) Real Party in Interest

The examiner has no comment on the real party of interest listed by the applicants.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application: 1 – 9, 19, and 20.

(4) Status of Amendments After Final

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

(7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

(8) Evidence Relied Upon

US 6,470,220	Kraus, Jr. et al.	10-2002

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims: Claims 1 – 9, 19, and 20 are rejected under 35 U.S.C. 102(a) as being anticipated by Kraus, JR. et al. (US 6,470, 220 B1).

In regard to Claim 1, Kraus, JR. et al. (hereinafter Kraus) discloses a device for determining mechanical, particularly elastic, parameters of an examination object, comprising

a) at least one arrangement for determining the spatial distribution of magnetic particles in at least one examination area of the examination object, further comprising a means for generating a magnetic field with a spatial profile of the magnetic field strength such that there is produced in at least one examination area a first part-area having a low magnetic field strength and a second part-area having a higher magnetic field strength (col. 13, ll. 9 – 32), a means for detecting signals *("SQUID," col. 7, ll. 60* – 67) which depend on the magnetization in the examination object, particularly in the examination area, that is influenced by a spatial change in the particles, and a means for evaluating the signals so as to obtain information about the, in particular temporally changing, spatial distribution of the magnetic particles in the examination area (col. 13, ll. 32 – col. 14, line 62); and

b) at least one means for generating mechanical displacements *("magnetocarcinotherapy (MCT)," col. 3, ll. 52* – 60), in particular oscillations, at least in and/or adjacent to the examination area of the examination object (col. 9, line 23 – col. 10, line 21; col. 13, line 15 – col. 14, line 25).

Regarding Claim 2, Kraus discloses a device as claimed in claim 1, characterized by at least one means, in particular at least one coil arrangement, for changing the spatial position of the two part-areas in the examination area so that the magnetization of the particles changes locally (see citation of passages in rejection of claim 1).

Regarding Claim 3 and 4, Kraus discloses device as claimed in claim 1, characterized in that the means for generating mechanical displacements or oscillations comprises at least one oscillating element ("implanted magnetic needle"), an oscillation generator ("magnet") and an oscillation transmission means for transmitting oscillations from the oscillation generator to the oscillating element and/or at least one sound source, in particular an ultrasound source; components are made of non-metallic and/or metallic material (col. 9, ll. 65 – 67; col. 3, ll. 52 – 60; col. 11, line 58 – col. 12, line 5).

Regarding claims 5 - 9, Kraus discloses relevant characterizations (see rejection of Claim 1; col. 9, line 23 – col. 10, line 64; col. 13, ll. 16 – 18; and col. 14, ll. 9 – 15).

Regarding Claim 19, Kraus discloses a use of the device as claimed in claim 1 for determining the internal pressure or the change in internal pressure of gas bubbles present in an examination object, in order to image body parts and/or organs (col. 6, ll. 41 – 67).

Regarding Claim 20, Kraus discloses a use of the device as claimed in claim 1 for examining, particularly in real time, tissue or organs, in particular respiratory organs (col. 6, ll. 46 - 48).

(10) Response to Argument

Argument 1: Applicant argues that cited prior art Kraus fails to disclose "producing in at least one examination area a first part-area having a low magnetic field strength and a second part-area having a higher magnetic field strength."

Examiner respectfully disagrees. In column 13, lines 15 – 32, where Kraus discuss means **(fig. 1)** for producing time-varying magnetic fields. More specifically, there are multiple coils surrounding a region of interest, wherein a first set of coils produce high intensity ("peak of current") magnetic fields, another set of coils produce low intensity ("minimum of the current") magnetic fields, and still a third set that produces fields in between. In effect, one already has obtained a first part area having a higher magnetic field strength and second part area having a lower magnetic field strength. Additionally, the time-varying application of currents to the coils produces "alternating fields" due to varying current at an "identical" rate but differ from each other in phase. Hence the "field rotation" the applicant refers to. However, as one of ordinary skill in the art would be aware, there is always some level of inhomogeneity occurring in nature and so there will be some level non-uniformity in of generated fields in the region of interest. Thus, in effect, one has obtained again a first part area having a higher magnetic field strength and second part area having a lower magnetic field strength. That is, it would be inherent that they alternate such that one field would have higher or lower in magnetic strength than a nearby field would have. Thirdly, it would also be clear to one of ordinary skill in the art that during the

generation of alternating current, during any one point in time at any one point of interest, there will be a generated magnetic field that is relatively higher (or lower) in strength than that of a generated magnetic field in a neighboring area. Thus, again, one has an instance where a first part area has a higher magnetic field strength and second part area has a lower magnetic field strength.

Argument 2: Applicant argues that cited prior art Kraus fails to disclose "Means for evaluating signals so as to obtain information about the temporally changing, spatial distribution of the magnetic particles in the examination area."

Examiner respectfully disagrees. In column 13, lines 33 – 62, Kraus discusses monitoring the behavior of the magnetic particles in response to the time-varying spatially distributed alternating magnetic fields generated as discussed above. Kraus observes that magnetic particles will precess with the aforementioned rotating external field in an attempt to maintain the lowest possible energy state (ll. 33 - 36) - hence angular rotation, a form of spatial displacement. In the aforementioned naturally occurring environment, the particles will experience a viscous drag as it rotates and consequently phase lag behind the applied field. If the drag is sufficient, the phase lag will increase until the lowest energy state (that is, the alignment of particles with the external (aforementioned alternating) field) is in the opposite direction of rotation. As a result, the particles will attempt to rotate in the opposite direction of rotation of the external field within the constraints of the drag and until the external field "catches up" up to the particle. This shows up as the commonly observed "jittering" of particles, where the particles move back and forth rather than perform complete rotations when aligning with external (aforementioned alternating) field (ll. 38 – 52). Accordingly, one is observing a temporally changing, spatial distribution of the

magnetic particles in an examination area exposed to a time-varying, spatially distributed, magnetic field.

Therefore, Kraus specifically discloses, suggests, or teaches characteristics that read on the present claim features as naturally occurring phenomena that are not possible occurrences but, rather, necessary occurrences.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Vani Gupta/

Examiner, Art Unit 3777

Conferees:

/Tse Chen/

Supervisory Patent Examiner, Art Unit 3777

/Sue Lao/

Primary Examiner